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Basel III framework  
The butterfly effect



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# The Basel butterfly flaps its wings

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They say that when a butterfly flaps its wings, it has the potential to create a hurricane elsewhere. Known as the butterfly effect, this idea theorises how a small change in a complex system can have large effects elsewhere. There is perhaps no better illustration of this than the potential impacts that the recent regulatory evolutions may have on the financial services industry going forward.

Over the past several months, a number of developments in the Basel framework have been observed both globally and locally in Singapore. On a global level, the Basel Committee on Banking Supervision (BCBS) is exploring further revisions to its supervisory framework while, closer to home, the Monetary Authority of Singapore (MAS) finalised the local framework for the Liquidity Coverage Ratio (LCR) in December 2014 and issued its consultation paper, “Proposed amendments to MAS Notice 1111 on risk based capital adequacy requirements for merchant banks”, in October 2014<sup>1</sup>.

As the changes cascade down from the global, regional and even local authorities, the industry finds itself in a constant state of flux, with the slightest change in regulation having the potential to cause a drastic overhaul of current business processes. In this context of perpetual regulatory motion, it has become increasingly challenging – and yet imperative – for the financial services industry to gain a proper understanding of the latest developments and their subsequent repercussions on the broader regulatory landscape.

This point of view aims to provide a clear and comprehensive overview of the main evolutions in the Basel framework on both the global and local scales. It will then review the potential implications for both the financial services industry and the business models that operate in them. Finally, it will highlight additional regulatory dimensions and trends that will play an important role in shaping the financial services industry moving forward.

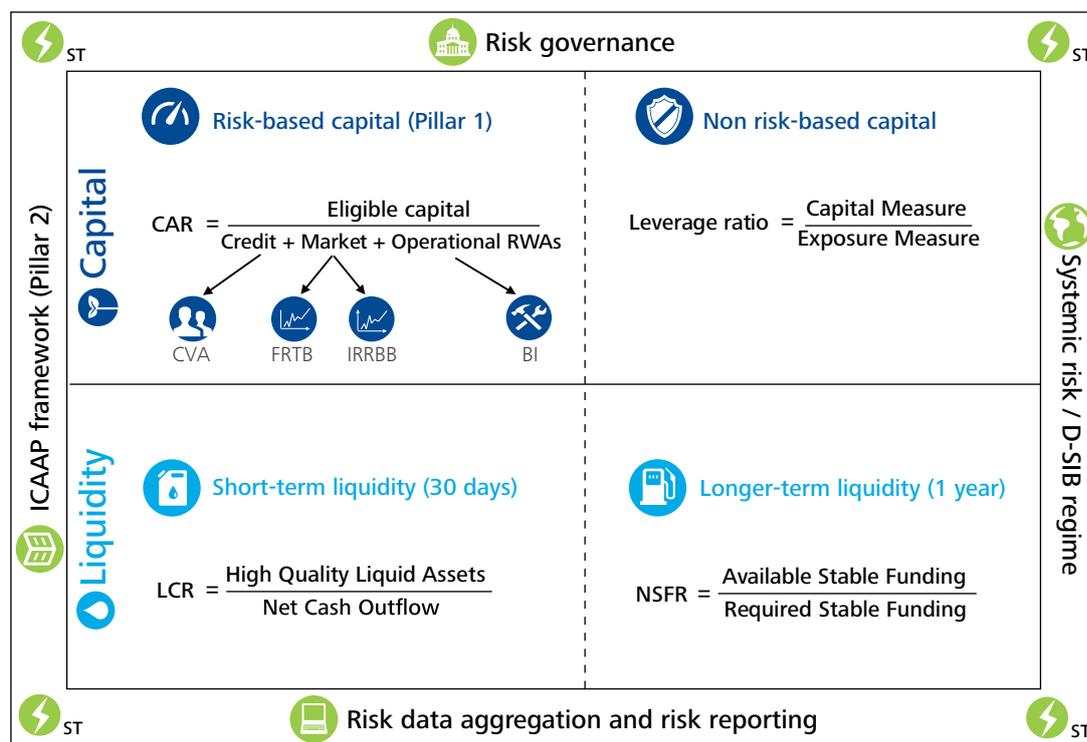
<sup>1</sup> MAS consultation on proposed MAS 1111 on Risk-Based Capital adequacy requirements for Merchant Banks, P025 - 2014

# Recent regulatory enhancements for capital and liquidity management

The main objective of the Basel framework is to promote a safer and more resilient financial system through the definition and application of enhanced solvency requirements.

The Basel framework has been made more complex and demanding following the global crisis that started in 2008. Since then, the frequent addition of various different elements to the framework has made it somewhat esoteric to most. This section aims to shed light on some of the main requirements and other related changes. For greater clarity, Figure 1 below illustrates each of the key evolutions.

Figure 1: A consolidated Basel framework to review and articulate trends, challenges and implications for 2015 and beyond



## Glossary

BI: Business Indicator  
 CVA: Credit Valuation Adjustment  
 DSIB: Domestic Systemically Important Bank  
 FRTB: Fundamental Review of the Trading Book  
 ICAAP: Internal Capital Adequacy Assessment Process

IRRBB: Interest Rate Risk in the Banking Book  
 LCR: Liquidity Coverage Ratio  
 NSFR: Net Stable Funding Ratio  
 RWA: Risk-weighted asset  
 ST: Stress testing

## Proposed amendments to MAS Notice 1111 for merchant banks



### Capital Adequacy Ratio (CAR)

The first area of enhancement is to the definition of capital and minimum CAR requirements<sup>2</sup>. In summary, the Basel III framework requires banks to display a higher and better quality capital base. In that respect, the MAS consultation paper “Proposed amendments to MAS Notice 1111 on risk based capital adequacy requirements for merchant banks incorporated in Singapore” transposes the following Basel III elements to Merchant Banks incorporated in Singapore:

- A finer definition of capital with the decomposition of Tier 1 into two distinct categories:
  - Common Equity Tier 1 (CET1), which is the best quality capital
  - Additional Tier 1 (AT1), which comprises non-CET1 capital instruments with strict requirements in terms of subordination and loss absorption
- The inclusion of an additional CAR with a minimum 4.5% of CET1, on top of the existing minimum Tier 1 CAR of 6% and total CAR of 8%
- Two additional capital buffer requirements, both required to be met with CET1 capital:
  - Capital Conservation Buffer will be gradually phased in from 0.625% of Risk-Weighted Assets (RWAs) in 2016 to reach 2.5% in 2019. This is to ensure that banks build up sufficient capital buffer outside periods of stress to be utilised when losses are incurred by the banks. Constraints on revenue or dividend distribution may be imposed by the regulator if the required amount is not met;
  - Countercyclical Buffer follows a similar phase-in approach as the Capital Conservation Buffer. However, its application is subject to MAS’ decision, based on macroeconomic conditions. The idea of this additional measure is for the banks to build up sufficient capital buffer as soon as the regulator estimates that there is an excess credit growth in the market and anticipates an imminent crisis.

### Highlights

These requirements are already part of the MAS 637 notice that transposed Basel III to locally incorporated banks. Its novelty, however, now lies in the fact that MAS has decided to extend this transposition to the merchant banks incorporated in Singapore, creating a more stringent framework for these organisations. It is also interesting to note that MAS has recently decided to expand the perimeter of the risk based capital framework to other non-bank financial institutions such as Capital Market Services Licensees<sup>3</sup> (CMSL) and financial companies<sup>4</sup>. However, these organisations are only required to adhere to the standard Basel II requirements instead of the more recent Basel III evolutions.

<sup>2</sup>Expressed as a minimum percentage of risk-weighted assets (RWAs) to be maintained in capital

<sup>3</sup>SFA 04N13 notice on risk based capital adequacy requirements for holders of CMSL

<sup>4</sup>MAS 832 notice on risk based capital adequacy requirements for Finance Companies incorporated in Singapore



### Counterparty credit risk measurement

The consultation from MAS also introduces the Basel III Credit Valuation Adjustment (CVA) standardised approach for merchant banks to assess their counterparty credit risk arising from their derivative transactions.

This requirement is already included in the MAS 637 notice with the locally incorporated banks having modelled their counterparty credit risk accordingly. Although the standard CVA formula may seem a little complicated<sup>5</sup>, it remains quite logical in its construct as it replicates the standard parametric Value-at-Risk (VaR) model, where the factor 2.33 represents a 99% confidence interval and the applied risk weight  $w_i$  represents the volatility of the Over-The Counter (OTC) Mark To Market (MTM) exposure based on the counterparty credit quality.

#### Highlights

The idea is to assess the risk of potential MTM losses on an OTC derivative exposure due to the deterioration of the related counterparty credit worthiness, which comes on top of the existing Current Exposure Method (CEM) that aims to assess the risk of potential losses due to the default of the related counterparty. Exposures with Central Counterparties (CCP) are normally exempted from the CVA charge.



### Leverage ratio

Similar to CET1 and CVA, the leverage ratio requirement is also included in the existing MAS 637 notice and MAS has decided to extend it to merchant banks as well.

This measure is a non risk-based one, meaning that it is not based on the relative risk represented by a given position but rather on the absolute amount of the exposure, that is, it is not risk-weighted. The objective is to limit the absolute level of business and exposures – both on and off balance sheet – that an organisation may adopt in relation to its capital base. This is to avoid massive deleveraging that could lead to sharp declines in asset prices in an economic downturn. As its name suggests, the leverage ratio should constrain the leverage capability that some banks were able to wield before the crisis. Examples of such extreme leverages include the aggressive increase of the debt-to-equity ratio on balance sheet, and off balance sheet by securitising significant portions of their “not so good” loan portfolios.

<sup>5</sup>CVA formula for standardised method:

$$K = 2.33 \times \sqrt{h} \times \sqrt{\left( \sum_i 0.5 \times w_i \times (M_i \times EAD_i^{total} - M_i^{hedge} \times B_i) - \sum_{ind} w_{ind} \times M_{ind} \times B_{ind} \right)^2 + \sum_i 0.75 \times w_i^2 \times (M_i \times EAD_i^{total} - M_i^{hedge} \times B_i)^2}$$

## Further international developments and related transposition to Singapore

Beyond these recent evolutions as proposed by the MAS consultation paper, a series of additional changes are also being developed by the BCBS in the field of capital and liquidity management. These changes will constitute the future Basel III.5 or IV which will affect financial institutions in Singapore in the near future.



### Capital adequacy



### Market risk in the trading book

One of the more advanced developments pertains to the Fundamental Review of the Trading Book (FRTB)<sup>6</sup>, which sets out how banks will soon have to assess their capital requirements ahead of the market risks within their trading portfolios. This review by the BCBS is actually “fundamental” as it introduces significant changes to the existing Basel II.5 framework for market risk. In summary, the following key elements were introduced by the FRTB:

- A stricter definition of which instruments can or cannot be allocated to the trading book and thus a clearer delineation or boundary with the banking book in order to limit the arbitrage opportunities in terms of capital treatment for banks;
- Longer holding periods for the underlying VaR calculations used to calibrate the revised risk weights under the standardised approach, based on the nature of the instruments within the trading book. For example, the large cap equity category will still be applied with a 10-day horizon whereas structured credit instruments such as Credit Default Swaps (CDS) will be applied with a 250-day horizon. All things equal, the longer the liquidity horizon, the higher the capital requirement;
- The utilisation of the expected shortfall model in lieu of the VaR for internal model-based approach to reflect the estimated loss of a given portfolio based on a certain confidence level and time horizon, assuming the VaR threshold has been already exceeded. On average, using this model should involve a higher capital requirements than the former VaR model; and
- The use of correlations under the standardised approach, which is possibly the most significant evolution in this list. Although this measure is designed to introduce more flexibility and risk-sensitivity into the standardised approach for market risk, it will also make it more complex for banks to handle their market risk data and compute their capital requirements.

#### Highlights

An interesting evolution we may observe from the Basel framework for Pillar 1 is the progressive convergence of the standardised approach and the internal model-based approach. This is achieved through two parallel and related trends:

- Making the standardised approach more flexible, risk-sensitive and better able to capture the economic dynamics of exposures.
- Limiting the incentive of the internal model by making its calibration and underlying assumptions more stringent.

This evolution can be observed not only for market risk but also for operational risk (as presented hereafter in this article) and credit risk (the BCBS is currently working on a revised standardised approach for this).

<sup>6</sup>BCBS consultative document on the Fundamental Review of the Trading Book



### Market risk in the banking book

Another interesting evolution recently observed at the BCBS level is the proposal to introduce standardised capital requirements for the Interest Rate Risk in the Banking Book (IRRBB), that is, the interest risk in an Asset Liability Management (ALM) context. This is as opposed to the interest rate risk of trading book instruments, which is already considered in the current Basel framework and will be revisited under the FRTB.

At present, IRRBB is not part of the Basel methodologies for assessing market risk which focus on the trading book<sup>7</sup>. The latter is also known as Pillar 1, which covers capital requirements for credit, market and operational risks.

Nevertheless, Pillar 2 of the international Basel framework – which was designed to capture additional risks that were either not considered enough, or not considered at all under Pillar 1 – is supposed to include IRRBB along with other risks such as reputation, strategy, business and compliance. Hence, the novelty of the recent Basel proposition was to shift IRRBB from Pillar 2, under which banks used to rely on their own internal measures, to Pillar 1, where they will have to apply a more standardised and potentially less risk-sensitive methodology as designed by the regulator.

#### Highlights

This important proposition from the BCBS shares and serves the same purpose as the FRTB, which is to limit the opportunities of arbitrage by banks when it comes to the classification of a given instrument into the trading or the banking book. This could be an important change, as well as a challenge, for organisations that did not perform an Internal Capital Adequacy Assessment Process (ICAAP) exercise in the past because they may now have to consider additional capital requirements for IRRBB.

<sup>7</sup>Apart from foreign exchange risk, which already considers trading and banking book foreign exchange exposures



## Operational risk

Operational risk is currently an important work-in-progress in the Swiss city of Basel. The BCBS released a consultative document in October 2014<sup>8</sup>, with the objective of revising the simpler approaches, to replace the current non-model-based approaches which comprise the Basic Indicator Approach (BIA), the Standardised Approach (TSA) and its variant the Alternative Standardised Approach (ASA).

The revised approach relies on the Business Indicator (BI) in lieu of the current Gross Income (GI) as the new income indicator for the base of capital requirements computations. The reason for this change is the biased construct of the GI approach which was based on the simplistic rule: “the lower the revenue, the lower the capital requirements for operational risk”.

The definition, composition and underlying assumptions of the BI rely on more robust statistical analysis for its calibration by the BCBS, as Operational risk Capital-at-Risk (OpCaR) methodology is based on GI and BI regression analysis and loss severity distributions, and should offer a significantly higher sensitivity to operational risk than the GI. For instance, it will not allow for negative contribution to the requirements: if we assume that a given trading book is at a net loss of –100, its contribution to the BI will be the absolute value of it, that is, +100, hence contributing to a higher capital requirements for operational risk, as opposed to the GI which would lower them.

### Highlights

In addition to the revised quantitative methodologies, the proposed framework for operational risk also puts a strong emphasis on the necessity for banks to implement a sound operational risk management framework and internal control environment. These risk management guidelines and expectations are already in place for large internationally active banks and their compliance is encouraged by the BCBS. From now on, organisations that used to adopt the simpler BIA (and hence previously did not have to comply with the qualitative requirements) will have to demonstrate such compliance when applying the revised standardised approach. Consequently, banks will need to address the Pillar 2 dimension with enhanced information and communication on their operational risk management framework and internal control environment.

<sup>8</sup> BCBS consultative document on revisions to the simpler approaches for operational risk

## Liquidity risk management

Aside from the capital management dimension, another important area of development and challenge for the banks hereafter is the liquidity requirements introduced by Basel III, which are based on the computation of the following two ratios:

### Liquidity Coverage Ratio

The LCR is a relatively standard liquidity risk ratio in its construct and aims to ensure that the level of High Quality Liquid Assets (HQLA) at a bank is sufficient to cover significant cash outflows over the next 30 days in the event of a stressed market environment such as an economic downturn, massive deposits run-off or the minimum roll-over of credit facilities.

### Net Stable Funding Ratio

The Net Stable Funding Ratio (NSFR) is designed to make sure that the amount of available stable funding at a bank commensurates with the minimum stable funding as required based on the nature and maturity of its assets and off-balance sheet activities. The horizon of this indicator is longer than the LCR, as it is a one year ratio.

MAS has recently decided to transpose the LCR requirements to Singapore and issued the first consultation paper in August 2013. After gathering feedback, MAS detailed its responses in a paper issued in August 2014, where it introduced more flexibility to the proposed framework. Initial propositions such as the introduction of a US Dollar LCR requirement had triggered particular concern within the industry. As a result, MAS decided to remove it and to limit the scope of entities for which the LCR implementation should be made mandatory for Domestic Systemically Important Banks (D-SIBs).

#### Highlights

MAS issued its notice 649 on Minimum Liquid Assets (MLA) and LCR on 28 November 2014<sup>9</sup>, which describes the revised frameworks and related requirements attached to the MLA and LCR regimes, and confirms the two-tier approach for D-SIBs (LCR mandatory) and non-D-SIBs (LCR optional).

<sup>9</sup>MAS 649 Notice to Banks, Banking Act, Cap 19 – Minimum Liquid Assets (“MLA”) and Liquidity Coverage Ratio (“LCR”)

# Business and economic implications for banks

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When considering all the recent and planned evolutions of the Basel framework, one may appreciate the high level of complexity in the regulatory landscape and the significance of the challenges it presents for most international banking organisations.

Depending on the nature and extent of activities of the entity, the potential impacts of the Basel framework may vary quite significantly, and it appears that different business models will tend to react quite differently to a given requirement.



## Risk-based capital

Some of the new capital adequacy measures under Pillar 1 are relatively agnostic to the business model specificities, such as the higher and better requirements in terms of CET1 that the banks will have to hold henceforth. Indeed, although the requirements are significantly increased through the introduction of capital buffers and a tighter definition of eligible CET1 components, these are not differentiated based on the types of exposures a bank has on its books and will eventually affect all organisations. The main driver for differentiation from one entity to another will then be found at the denominator level of the CAR and comes essentially from the RWA measures with regard to credit, market and operational risk requirements.

For instance, if we consider the new CVA framework, banks with significant portions of OTC derivatives on their books should be far more impacted than other organisations, including those who act as principals for their clients and cannot rely on valid netting agreements as per regulatory requirements. More banks are investing in better collateralisation practices, as well as further enhancements to their netting ability under Basel. Ultimately, this should also encourage the banks to progressively utilise more CCPs for the clearing of their OTC exposures in order to enjoy a more favourable treatment under Basel III. This may also represent an opportunity for certain large institutions to develop and/or specialise in the central clearing business.

The market risk evolutions may also impact banking organisations in different ways. Banks that display a significant volume of trading activities for their own accounts, such as proprietary trading, will face a major challenge in complying with the future FRTB framework. Even though the consideration of correlations and diversification should introduce greater risk-sensitivity into the Standardised Approach for Market Risk (SA[MR]), its complexity as compared to the current SA[MR] will pose many operational challenges to banks, such as the development of algorithms and calculation engines based on object-oriented programming language in lieu of the traditional Excel formulas and Visual Basic for Applications (VBA). Besides, with the calibration of the future approach based on more conservative models on average, such as the expected shortfall and higher liquidity horizon for the VaR, some organisations that specialise in a certain range of products, such as those trading credit derivatives like CDS and Collateralised Debt Obligation (CDO) or commodities, may be strongly impacted from a capital adequacy perspective.

On the other hand, for banks with business models that are less active in trading and rely more on significant maturity and rate transformation, for instance, with mostly deposits or short-term borrowing financing longer-term loans, the potential move of IRRBB from Pillar 2 to Pillar 1 may prove to be quite substantial from a capital adequacy perspective. The intensity of the impact will also vary based on the capital adequacy regime to which an organisation is currently subjected. Where a bank already has to quantify additional requirements under a Pillar 2 framework, the shift to Pillar 1 may even be neutral if we assume the current methodology of assessing IRRBB under Pillar 2 to be as conservative as the future Pillar 1 IRRBB approach. However, where such a Pillar 2 framework is not in place, the impact of the IRRBB in Pillar 1 could mean anywhere from zero to a significant amount of capital to be held against this risk.

Finally, in terms of operational risk requirements, we can expect to see the current BIA and TSA getting replaced by a single revised approach. This will also impact the future capital adequacy of most organisations. Even though it is designed to capture risk exposure differences based on the respective business lines, which are assumed to be more or less risky from an operational viewpoint, no business will be spared in terms of capital requirements for the two main reasons highlighted previously: it is calibrated to be more risk-sensitive, hence more aligned to actual operational losses experienced during the crisis, and it also has a more conservative design, considering absolute instead of relative (positive or negative) contributions.



## Non risk-based capital

The non risk-based capital measure that constitutes the leverage ratio is highly sensitive to the business model of a banking organisation, with highly leveraged institutions, by definition, getting impacted more. This measure is designed to limit potential contagion effects in the economy: should a highly leveraged institution fail, it could potentially bring down many of its counterparties with it.

The organisations most impacted are usually those that display a high debt-to-equity ratio and tend to perform significant maturity transformation on their books. Some credit institutions may also be incentivised to increase their leverage in a context of flat rates, so as to maintain absolute levels of margin that are still acceptable to their shareholders. By doing so, they might expose themselves to a higher impact of the future leverage ratio requirement.

Other specific activities such as trade finance and securitisation might also be significantly impacted by the leverage ratio, both of which rely on potentially voluminous exposures off-balance sheet that may need to be reintegrated into the exposure measure for the calculation of the leverage ratio.

### Highlights

Overall, the leverage ratio is probably the more divisive topic among bankers and regulators. The bankers are pushing for greater risk-sensitivity of capital adequacy measures, for example, through model-based approaches and better consideration of correlations and diversification effects, while the regulators are expressing increasing interest in having a non risk-based measure of capital to curb the undesirable effects observed during the crisis, such as excessive leverage followed by lethal deleveraging, the collapse of asset prices, and the domino effect of large banks defaulting which culminated in a tax payers' bail-out.

Some voices from the regulators also suggested the need to raise the minimum level for the leverage ratio to 10%, instead of the 3% as required by the current Basel III framework<sup>10</sup>. This would mean that for any combined exposure of 100 on and off-balance sheet, a bank would have to maintain a minimum Tier 1 capital amount of 10, independent of the actual risk profile of its exposures. A higher limit on the absolute amount of activity undertaken by an organisation would serve as a useful and efficient safeguard against both excessive idiosyncratic and systemic risks. Unsurprisingly, the bankers consider such propositions an arbitrary constraint vis-à-vis their role of financing the economy through their canonical lending function.

<sup>10</sup>Alan Greenspan, former US Federal Reserve Chair, even suggested a leverage ratio over 10%.

## Short-term liquidity

Although the LCR had been anticipated to be a very significant measure for banks worldwide, it seems that based on preliminary assessments, most banks in Singapore are relatively resilient from a liquidity perspective and tend to better comply on average with the LCR requirement as compared to their European counterparts.

However, this does not mean that all banks are immune to the potential impacts of the LCR in terms of technical implementation and subsequent compliance.

As previously mentioned, MAS has decided to apply a two-tier approach in Singapore in response to feedback received last August, and materialised this decision in its revised notice 649 issued in December 2014; according to which only the banks assessed to be D-SIBs will have to comply with the new LCR requirements. Other entities will be given a choice between complying with the new LCR or complying with a revised Minimum Liquid Assets requirement, the latter being modified to include an all-currency requirement on top of the Singapore dollar requirement, which is the current requirement.

In terms of governance and ALM framework, regional banks may have to rethink their processes in order to include this new requirement in their decision-making and day-to-day management. The quality of the deposits is particularly paramount to ensure compliance with the LCR, as the more stable they are deemed under the Basel definitions, the less withdrawal is assumed to be applied on those deposits when computing the ratio. Hence, banks will struggle to attract deposits from the more LCR-compatible clients going forward, especially in the Southeast Asia (SEA) region where the bigger players are keen to expand quickly and grow the volume of their deposits, for example, in Indonesia and Myanmar.

Business models that are significantly exposed to certain nature of customers, such as small and medium-sized enterprises, or financial institutions, may have to apply higher run-off factors to their deposits and thus may observe adverse impacts on the level of their LCR. Some particular products may also be undesirably impacted by the LCR requirements, such as multi-currency and/or notional cash pooling, due to the treatment of foreign exchange asset-liability gaps and existing asymmetry in the way respective assets and liabilities vis-à-vis a same counterparty may be treated under the LCR, such as operational versus non-operational accounts. On the other hand, MAS has decided to apply a less severe requirement for trade finance products (i.e. 3% run-off as compared to the 5% mark fixed by the BCBS).

Private banking business models are in general relatively immune to potential LCR shortfalls, given the traditionally highly liquid profile of their asset base including local sovereign bonds, cash or cash equivalents, current or short-term deposits and short-term Lombard loans<sup>11</sup>. Nevertheless, there may still be some adverse impacts when a significant portion of their deposits are held via intermediary structures such as trust companies or Personal Investment Companies (PICs), which may be applied a more severe run-off factor as they are considered other legal entities and non-natural person deposits. In its latest response to industry feedback in December 2014, MAS made it clear that treating trusts and PICs as retail deposits or tailoring their run-off factor based on institution-idiosyncratic statistical analysis would not be appropriate in the context of the LCR.

<sup>11</sup>Credit facilities secured/collateralised by the customer's pledged assets such as stocks, bonds or life insurance policies

An interesting phenomenon to note for the private banking business model is the countercyclical behaviour observed in certain cases, where the clients of the bank tend to deleverage their investments (asset under management) and turn them into cash flowing back to their current account on the balance sheet of the bank, thus witnessing a run-in instead of a run-off for those deposits in an economic downturn situation.

Finally, as we have witnessed in the past for credit, market and operational risks, one could expect the international regulator to propose an alternative approach for liquidity risk that is more risk-sensitive and model-based in nature than the current prescriptive approach.



### Longer-term liquidity

Although the NSFR will become a minimum standard only by 1 January 2018 under the BCBS framework and has yet to be implemented by banks, its future compliance seems to entail far more business challenges than the LCR. The reason being its longer horizon of one year, during which it requires banks to have sufficient stable funding in front of their assets. Hence, it will directly impact the maturity transformation function of the bank, and will require most of the large banks to augment the portion of their longer-term stable sources of funding on their liabilities. This will automatically translate into higher funding costs and reduced interest margins. On the other hand, it presents the opportunity to fix some longer-term borrowings while the interest rate curve is still flat in most major currencies.

#### Highlights

The most impacted businesses from a NSFR perspective are likely to be all unsecured types of lending with maturities exceeding one year, and in particular long-term project financing such as infrastructure financing. This is far from being neutral when one considers the ever increasing demand for such funding in the region over the next decades. However, it is still possible that the regional regulators, while willing to align their local supervision with international Basel practices, will eventually adapt the framework to the local specificities and economic needs. Should the Basel III NSFR be applied *pari passu* in its current international version to the regional banks, this might have significant implications in terms of growth opportunities.

# Additional Basel regulatory dimensions for consideration

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On top of capital and liquidity management comes a set of additional requirements, which will also contribute to shaping the strategy of banking institutions henceforth.

## ICAAP framework

Another recent trend has been the increasing pressure from the market and the regulators to improve Pillar 2 and the ICAAP report disclosure. While the Pillar 1 dimension of capital adequacy is designed to capture credit, market and operational risks, a banking organisation also possesses other significant vulnerabilities, such as those derived from its strategic decisions, its business orientation, its overall level of compliance and its reputation vis-à-vis the markets and its clients.

Pillar 2 has been implemented by the international regulator to take into consideration such sources of risk that are not part of Pillar 1 and may be difficult to quantify. Large organisations are already required to develop a comprehensive framework to assess the overall adequacy of their capital allocation with regards to the key risks their business model is exposed to. Under this framework, banks also have to elaborate a capital planning aligned with their strategic and business plan. This capital planning has to be performed over a certain horizon of time, usually between 3 and 5 years, and is comprised of a base case with at least three different stress scenarios, including an identified worst case. This is to test the resilience of the bank's capital base (loss absorption capacity) under severe stress conditions. Last but not least, banks have to demonstrate that the ICAAP framework is embedded in their decision-making process and that it is not a one-time compliance exercise but rather a critical governance tool for top management.

With most of the largest banks in the region already performing ICAAP, it is possible that this requirement would be extended to smaller institutions in the future. This has been observed in certain jurisdictions such as Switzerland, where a few years ago the Swiss Financial Market Supervisory Authority (FINMA) required all banks, regardless of size, to perform a capital planning exercise.

## Global and domestic systemically important banks

The global systemically important bank (G-SIB) methodology is another prudential framework introduced by Basel III with two objectives in mind:

- Reduce the probability that a banking organisation deemed systemic defaults or goes bankrupt, through higher loss absorbency capacity requirements in the form of higher capital buffer for these G-SIBs.
- Limit the direct financial impact, that is, idiosyncratic risk, and subsequent contagion effect on the economy or systemic risk, should this organisation eventually default or go into bankruptcy, which is to be achieved through the definition and implementation of Resolution and Recovery Plans (RRP).

The Financial Stability Board (FSB) is currently issuing new rules on the Total Loss Absorbency Capacity (TLAC) of large international banks that are deemed to be G-SIBs. These rules should come on top of the existing capital buffers, and increase the minimum amount of CET1 capital to be maintained by the banks. In order to comply with the higher levels of required capital, the systemic banks will have the option to issue specific debt instruments, such as contingent convertible bonds (CoCos), with the explicit condition that these instruments should be written down or converted into equity as soon as the bank's CET1 ratio falls under a specified level.

Although CoCos issued by a bank would contribute to its loss absorbency capacity, it would also come at a higher coupon price, considering that such a contingency clause exposes the lender to a partial or even full loss of its investment. Hence, investors will need a higher remuneration for the higher risk taken, and this will further impact the overall profitability of the financial institutions.

In parallel to these quantitative requirements, G-SIBs also have to design an RRP. This will be part of the global contingency plan with the objectives of preserving the organisation as a going-concern and facilitating a rapid resolution in the scenario of a crisis situation. It also has to plan for a potential wind-down process in case of insolvency and/or bankruptcy, which will have to be deployed in conjunction with the related authority. The definition and implementation of such RRP is a challenge as it has to be very comprehensive and rely on clear assumptions and detailed stress scenarios that test the limits of the organisation's resilience to an idiosyncratic or systemic shock. It also assesses the potential contagion effects of such an event.

### Highlights

MAS has launched a consultation on this topic and is about to implement a D-SIB regime in Singapore, which replicates the G-SIB framework, for the local banks that are deemed to be systemic to the Singapore economy. Similar higher loss absorbency requirements and RRP will ultimately be implemented by larger banks. Additional criteria such as the local market share of deposits will also be considered for the D-SIB assessment performed by MAS.



### Risk data aggregation and risk reporting

Another area the regulators would like to see enhanced at banks is the quality of the governance and processes in relation to risk data management.

One of the key lessons learnt from the series of 2008 events is that the lack of data integrity and timeliness, especially when it comes to providing senior management with a meaningful and actionable risk reporting set, can potentially worsen the impact of a crisis situation. Risk reporting is a critical tool of the decision-making process; the board and senior management should take ownership of the risk data governance and infrastructure.

Even though much effort is being made to enhance the risk reporting framework in general, there is still room for improvement in the way reliable risk data is being aggregated and reported to senior management. The consolidated risk reporting, especially for a large multinational organisation, cannot be perfectly comprehensive and real-time based; gaps or weaknesses in its aggregation and internal construct cannot be avoided, but they have to be clearly identified and mitigated.

### Highlights

Under Basel rules, a bank is also required to be in the position to provide accurate and timely risk data to senior management during stress conditions. Risk data management has to be considered and addressed within the contingency plans of the organisation. It is also interesting to note that the risk data aggregation and risk reporting processes are closely related to other dimensions of the Basel framework, such as governance, ICAAP and G-SIB or D-SIB requirements. This fosters the need to develop an integrated risk management framework, as it becomes increasingly critical to properly address and manage all those new requirements in a more efficient way.



### Risk governance

Building such an integrated risk management framework requires strong corporate governance. The Chief Risk Officer (CRO) in particular will have to adapt and integrate all the dimensions reviewed in this article into the overall risk management of the bank. This makes her/his role even more exciting but also far more challenging.

The BCBS recently issued a paper on corporate governance and MAS revised its guidelines on risk management practices last year. These guidelines comprise a section on the roles and responsibilities of the Board and senior management, including the role of the CRO, which should soon be codified in the Banking Act.

This means that the level of requirements and expectations from the regulator vis-à-vis a bank's risk management framework and governance will still increase going forward.

There are three major trends that are reflected by and can be extracted from those two important texts:

- The higher positioning of the CRO in the organisation with a clear enhancement of her/his independence, even vis-à-vis the Chief Executive Officer, provides an additional dimension to her/his role which makes her/him more comparable to the internal audit function:
  - *"The CRO should have a reporting line to the Board and full access to information within the institution, relevant affiliates and subsidiaries. The role of the CRO [...] should be distinct from other executive functions and business line responsibilities."*<sup>13</sup>
  - *"The CRO should be independent and have duties distinct from other executive functions. [...] the CRO should have the ability to meet with the board or risk committee without executive directors being present."*<sup>14</sup>

<sup>13</sup>MAS guidelines on risk management practices - board and senior management, March 2013

<sup>14</sup>BCBS consultative document - guidelines on corporate governance principles for banks, October 2014

- The greater involvement of the CRO in the decision-making process, with her/his clear participation required for important decisions and also the ability to demonstrate her/his capacity to influence those decisions:
  - *"Key activities of the risk management function should include: [...] influencing and, when necessary, challenging material risk decisions."*<sup>15</sup>
  - *"The CRO's responsibilities also include managing and participating in key decision-making processes (e.g. strategic planning, capital and liquidity planning, new products and services, compensation design and operation)."*<sup>16</sup>
  - *"The role of the CRO includes: [...] participating in key decision-making processes."*<sup>17</sup>
- The larger perimeter of the CRO risk landscape she/he has to cover – with the inclusion of all material risks such as Anti-Money Laundering and Counter Financing Terrorism (AML-CFT), data loss protection, digital risk and cybersecurity – for which a risk-based approach and a corresponding risk management framework has to be implemented:
  - *"Risk identification should encompass all material risks to the bank, on- and off-balance sheet and on a group-wide, portfolio-wise and business-line level. In order to perform effective risk assessments, the board and senior management, including the CRO, should regularly and on an ad hoc basis, evaluate the risks faced by the bank and its overall risk profile."*<sup>18</sup>

An actual paradigm shift with regards to the risk management function and role may thus be observed through those few excerpts of BCBS and MAS documents. Apart from the technical challenge represented by the variety and complexity of risks and regulations, the CRO also has to develop her/his communication skills to be in a position to actually influence and challenge key decisions, as required by the regulators.

### Highlights

The necessity for banks to consider an integrated risk management framework is hence evident from a governance perspective, as the influencing ability will be directly associated with the quality, relevance and perimeter of the risk reporting brought to senior management in the form of risk data management and ICAAP processes.



### Stress testing and scenario analysis

Last but not least, a common shared area of all the Basel dimensions previously reviewed through this article is stress testing and scenario analysis.

The need for the banks to define, implement, run and analyse robust stress testing and scenario programmes is mentioned in almost all the main Basel regulations that have been recently developed by the BCBS to enhance the risk management practices of banks. It is also a very important area of focus for the regional and Singapore authorities, who are willing to demonstrate and ensure that the level of resilience of their banking industry, and thus of their economy, is sufficient to face major crisis situations.

<sup>15</sup>BCBS consultative document - guidelines on corporate governance principles for banks, October 2014

<sup>16</sup>BCBS consultative document - guidelines on corporate governance principles for banks, October 2014

<sup>17</sup>MAS guidelines on risk management practices - board and senior management, March 2013

<sup>18</sup>BCBS consultative document - guidelines on corporate governance principles for banks, October 2014

It has indeed become paramount for regulators around the world to obtain more information on how a banking organisation would react and resist when subjected to an external shock. Consequently, the level and intensity of the requirements surrounding risk data management and how it is governed by the banks has been significantly enhanced, and is expected to continue from this point forward.

The European Central Bank (ECB) recently performed a round of stress tests for 130 banks in the Eurozone, of which 25 failed and 13 were notified to raise additional capital. There is general consensus on the fact that this exercise constitutes a great achievement, when considering the number of organisations audited and the level of detail involved, especially for the review of assets and non-performing loans (NPL). Nevertheless, when reviewing the main assumptions of the stress scenarios conducted by the ECB and ran by the banks, it appears that some of them do not fully replicate the order of magnitude observed in the past for the following reasons:

- No significant sovereign debt restructuring was simulated. Based on the recent experience with Greece, such a scenario cannot be entirely excluded going forward, especially when considering the current debt-to-Gross Domestic Product (GDP) ratios that tend to rise sharply for some countries of the Eurozone. Furthermore, most of the largest European banks maintain a large portion of their capital in sovereign bonds, sometimes above 100%.
- The stress on the interest rate curve was limited. For instance, Italy's curve was shifted up by "only" 1.5%. In reality, it may happen to be significantly higher than that if we refer to past evolution of spreads between Germany and Italy, and also when considering the progressive end of the Quantitative Easing policies around the globe.
- The equity market is subjected to a material downturn (at -18%) but does not simulate a crash like the ones recently observed during the crisis. For example, the downturn was around -50% between end 2007 and end 2008 or around -30% during summer 2011<sup>19</sup>. As a comparison, the Federal Reserve in its Dodd-Frank Act Stress Test 2014 uses the following assumptions for the supervisory scenarios to be run by the banks: equity prices fall 36% under the adverse scenario and 50% under the severely adverse scenario<sup>20</sup>.

In the SEA region and Singapore, we expect to see stress testing exercises become increasingly severe in terms of the key assumptions and scenarios, and progressively more demanding in terms of data, resources and processes required to define, design and run those scenarios. The banks are also required to analyse and interpret their results with a view of facilitating decision-making.

### Highlights

The SEA regional economic convergence, which also entails a greater regulatory convergence, may push the local regulators to harmonise their supervisory stress testing methodologies and requirements in the near future. Consequently, it will force the banks to adapt and reinforce their stress testing practices.

<sup>19</sup> These are raw estimates based on the Eurostoxx data for the period mentioned to illustrate the order of magnitude in the index changes and are not deemed to be exact figures between two fix dates.

<sup>20</sup> <http://www.federalreserve.gov/newsevents/press/bcreg/bcreg20140320a1.pdf>

# An impending hurricane

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At the dawn of 2015, the financial services industry will have completed half of the Basel III journey, which started in December 2010 with the first text from the BCBS on the new framework and its main components. The implementation will be completed in January 2019 with the full introduction of all key measures for capital and liquidity requirements.

This journey, which some may find necessary and even vital for the protection and sustainability of our financial and economic system, is also undoubtedly challenging for the banks, not only from an operational and compliance perspective, but also in terms of their ability to integrate all the significant evolutions while preserving their capacity to generate positive returns.

As regulations continue to impose pressures on profitability and return on equity targets, the most important challenge for regulators is to maintain the necessary leeway for the banks to continue to invest in the economy, finance long-term projects and lend to corporates and individuals to feed innovation and growth. After all, there cannot be any growth without any risk. In that respect, the task of the regulators is not easy, as they have to find the optimal and delicate balance between safety and growth.

If there is anything the industry has learnt in the aftermath of the crisis, it is that it only takes a few critical calibrations to forever alter the face of the financial services industry as we know it. While financial institutions will only feel the full-blown impacts of the Basel a few years from now, many – if not all – have already begun their preparations. The question now is to know whether the flapping of the wings of a butterfly in the Basel city in 2010, will eventually beget a worldwide hurricane by 2019.

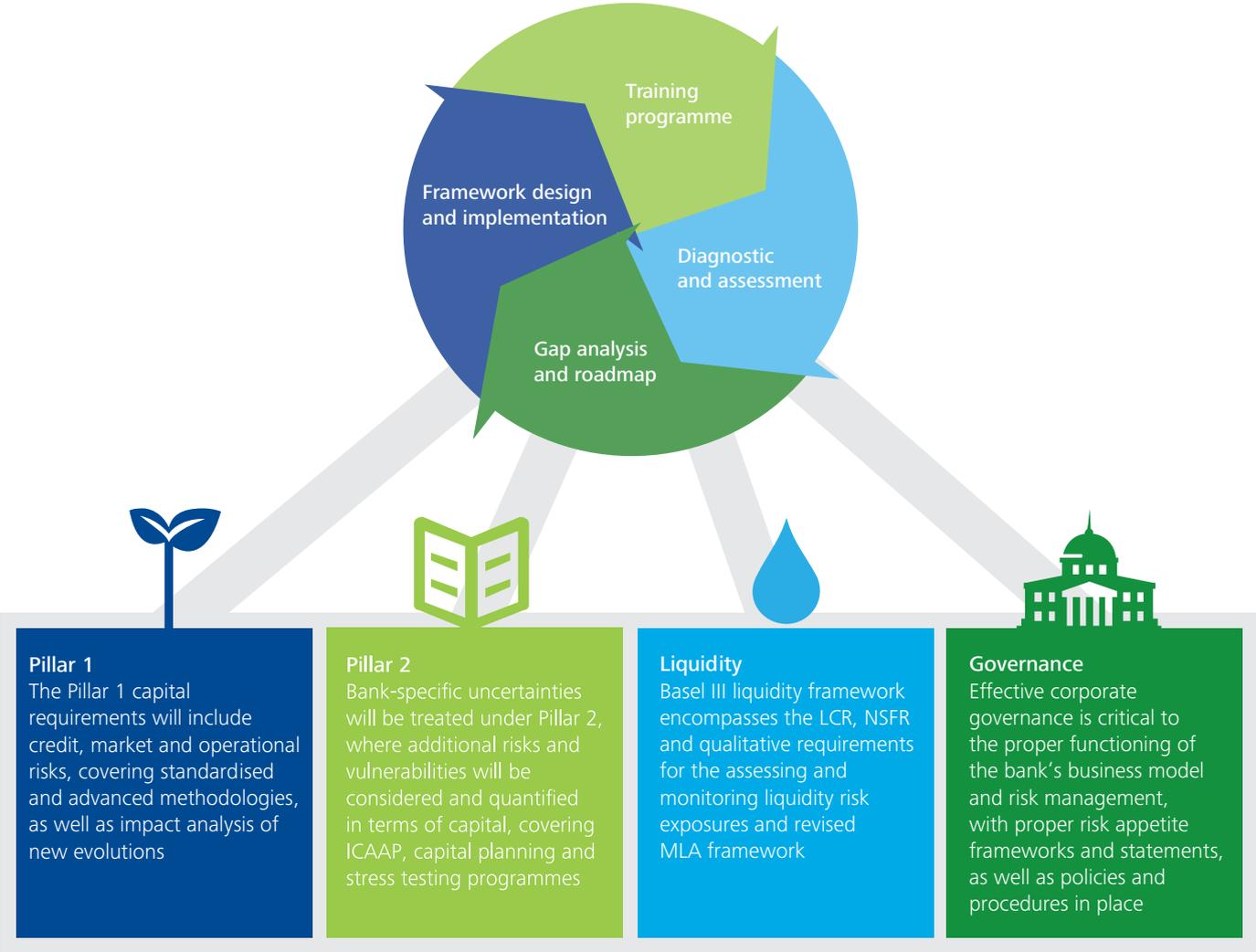
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To address the root of all business issues in today's Basel III world, our risk and compliance specialists can support clients in conducting impact assessments and gap analyses, evaluating strategies to optimise their capital and liquidity management, as well as designing and implementing frameworks to enhance their risk, capital and liquidity management processes.

## Financial institutions' needs for Basel III advisory services



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